Zero Retries issue 0150 2024-05-03

Zero Retries is an independent newsletter promoting technological innovation that is occurring in Amateur Radio, and Amateur Radio as (literally) a license to experiment with and learn about radio technology. Now in its third year of publication, with ~~1500+~~ 1600+ subscribers.

About Zero Retries

Steve Stroh N8GNJ, Editor

Jack Stroh, Late Night Assistant Editor Emeritus

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Web version of this issue - https://www.zeroretries.org/p/zero-retries-0150

Request To Send

Commentary by Editor Steve Stroh N8GNJ

Zero Retries 0150 and Zero Retries Hits 1600 Subscribers!

There have now been more than 150 "named" issues of Zero Retries, including one memorable issue that I broke into three issues published simultaneously, but this is a nice milestone - 150+ issues, weekly without break.

The cadence of subscribership growth of Zero Retries seems to be accelerating. Zero Retries's subscriber count hit 1500 as of Zero Retries 0146 on 2024-04-05 and scarcely a month later, 1600 subscribers! Other than a minor increase from my LinuxFest Northwest 2024 talk this past weekend, I haven't seen any specific mention that caused an increase of subscriptions.

On Mastodon, I noticed that I hadn't updated the subscriber count in my blurb. I went to fix that and noted that there are an additional 260 followers there, and pretty much by definition they're following to know about new issues of Zero Retries since that's (almost) all I post there.

And, amusingly, Substack notified me that three other Substack newsletters have begun recommending Zero Retries - one about Artificial Intelligence, one about music, and another about investing. I checked them out briefly, and couldn't see *any* overlap between their subject matter and Zero Retries.

Thus I conclude that this is "gaming" of some kind within the Substack ecosystem, and it's symptomatic that Zero Retries is no longer a good fit for continuing to use Substack to publish Zero Retries.

For the benefit of newer subscribers, Zero Retries was begun solely out of frustration that despite *so much technological innovation occurring in Amateur Radio*, there was no one place to know about it / read about it. Such stories were only mentioned very occasionally in the "mainstream" Amateur Radio media. Eventually that frustration boiled over into starting Zero Retries. At that time, I could imagine that Zero Retries might, conceivably, achieve 500 subscribers - that would have been fantastic. 1000 subscribers was "oh… *my*…". Then the 1500 subscriber milestone ticked by and there are now a handful of new subscribers each week.

Thank you Zero Retries email subscribers, RSS followers, Substack followers, Mastodon followers, Bluesky followers, and all of you ***Zero Retries readers***. If there were few readers, Zero Retries wouldn't be worth continuing to publish at this pace. You readers make this investment in time, work, and sacrifice of other fun, personal projects worthwhile.

As always, my sincere thanks to all the Founding Members and Paid Subscribers who are helping keep Zero Retries going by offsetting some of the expenses incurred with Zero Retries. I plan to publish mention of all financial contributors annually on the (July) anniversary issue.

Major Conference Countdowns

- **Hamvention 2024** in Xenia, Ohio, USA on 2024-05-17 thru 19, in *02* weeks!
- **HAM RADIO 2024** in Friedrichshafen, Germany on 2024-06-28 thru 30, in *05* weeks!
- **JARL Ham Fair 2024** in Tokyo, Japan on 2024-08-24 and 25, in *16* weeks!

See other events at the Zero Retries Guide to Zero Retries Interesting Conferences.

Presentation at LinuxFest Northwest 2024

My presentation at LinuxFest Northwest 2024 - **Amateur Radio and Open Source (Not Just Linux)** went well overall. The slide deck was too long (50+ slides), was almost entirely text (and too much text per slide), and it had a lot of extraneous mentions that weren't really on-topic discussing Open Source activities within Amateur Radio.

That said, presenting at LinuxFest Northwest 2024 was a nice "beta" for future presentations in which I will be "evangelizing" Amateur Radio to techies as a fun, interesting, and useful (in technical careers) activity. As I mentioned this presentation to a few others this week, I received some good feedback that I'll be incorporating into the presentation. One comment was "well… some people just want to get into Amateur Radio *for the fun of it*, including using Morse Code". The implication that I took from that comment was "Do you think only techies are suitable for Amateur Radio?". No, that's not my perspective, which is that there are many *others* such as my former ARDC colleague (and now an ARDC director) Bob Witte K0NR, who can make the case that Amateur Radio is a fun, interesting hobby and activity for many folks (who aren't necessarily techies). But I feel qualified, from *my* background, and Zero Retries, to promote Amateur Radio to *techies*.

The most recent post by K0NR discussed that "Digital Modes" activity were the third most popular activity in a survey of Canadian Amateur Radio Operators, superseded only by "Casual Operating" and "Traditional Voice Modes (SSB / AM / FM)". That validates my perspective that "digital modes" are worth promoting to techies. Again, I'm *not* positing that the Zero Retries Perspective - promote Amateur Radio "techie" modes, to techies who might become interested in Amateur Radio, as the *only* path to grow Amateur Radio. But doing so is "a" path that I can personally, and somewhat uniquely, contribute to. Here is the video of my presentation on YouTube:

The slide deck (annotated with links, post-presentation) is available for download at
https://archive.org/download/liinuxfest_northwest_2024_amateur_radio_open_source/liinuxfest_northwest_2024_steve_stroh_n8gnj_slides_with_links.pdf

(My thanks to Digital Library of Amateur Radio and Communications for hosting it.)

Presentation at RATPAC on 2024-05-08

I will be the presenter at the Wednesday session of RATPAC (Radio Amateur Training Planning and Activities Committee) videoconference training series on 2024-05-08.

The topic of my presentation will be:

Tracking technological innovation in Amateur Radio - the Zero Retries newsletter

Mostly I want to use this presentation to highlight some of the more interesting technological innovation that's underway in the 2020s, and there will be some overlap of my presentation at LinuxFest Northwest 2024.

Go to the RATPAC page and scroll down for the link for my presentation.

Future Zero Retries Project - The Zero Retries Interesting Catalog

As an outgrowth of a story in this issue - **Why I'm Not Worried that MFJ Winding Down Presages a Downturn in Amateur Radio**, I see clear need

to create an online "catalog" which is actually a directory / guide of Zero Retries Interesting products. One of the problems in transitioning from single company with diverse products such as MFJ (manufacturer) or Ham Radio Outlet (retailer of many products and companies), is that it's really hard for Amateur Radio Operators to know what products are actually available for Amateur Radio. Examples:

- Byonics
- Digirig
- G1LRO
- KH6HTV Video
- Masters Communications
- N7EBB
- NW Digital Radio
- RPC Electronics
- TAPR
- Turn Island Systems
- ZUM Radio

These companies, and dozens1 more, are small (often one person) "micro manufacturers" of unique products that don't advertise, and don't sell through retail such as Ham Radio Outlet or DX Engineering in the US. Not to mention the numerous Amateur Radio hardware manufacturing projects that aren't organized as a company such as KiwiSDR and the products related to Amateur Radio distributed through Crowd Supply and Tindie.

Thus without such a catalog / directory / guide, it's hard for someone new to Amateur Radio to know where to go for unique hardware that would make their Amateur Radio experience more fun and interesting. This isn't a project that's necessarily unique to me or Zero Retries… but if someone else doesn't do it, eventually it will rise up the priority list of projects to tackle as part of the Zero Retries mission.

In the meantime…

I want to spend some significant time in N8GNJ Labs this coming week getting some traction on some *fun* Amateur Radio projects… not just infrastructure / organizing that has consumed the past month of my time in N8GNJ Labs.

Also to be tackled on a rare day that doesn't include wind or rain is to repair the bent antenna mast for my primary Amateur Radio antenna.

And, of course, tomorrow… ***May the 4th Be With You***. 😄

Apologies for the late publication time of this issue. It was difficult to finish my remembrance of K7VE.

73,

Steve N8GNJ

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Logo courtesy of MFJ Enterprises.

MFJ Enterprises to Cease Manufacturing

By Steve Stroh N8GNJ

In a widely circulated letter titled "A Heavy Sad Heart", the Founder of MFJ Enterprises, Martin F. Jue K5FLU, announced that MFJ will cease manufacturing as of 2024-05-17.

> As many of you have heard by now, MFJ is ceasing its on-site production in Starkville, Mississippi on May 17, 2024. This is also the same for our sister companies' Ameritron, Hygain, Cushcraft, Mirage and Vectronics.

MFJ seems to be planning to continue at least some business activity, post manufacturing:

> We are going to continue to sell MFJ products past May 17, 2024. We have a lot of stock on hand. We will continue to offer repair service work for out-of-warranty and in-warranty units for the foreseeable future.

As this article is written, there is no mention of K5FLU's announcement on the MFJ website, though per the announcement, MFJ is "business as usual"

through 2024-05-17.

It's my guess that the timing of this announcement was chosen to set expectations for one of MFJ's last appearances at Hamvention 2024 in a few weeks. MFJ's booths have always been one of the largest at Hamvention, and unlike many other large "manufacturer" booths at Hamvention, MFJ was happy to actually sell you a product across the counter.

I'll always have fond memories of MFJ in my Amateur Radio career as they were one of the first to license the TAPR TNC-2 design and their ability to manufacture at scale, marketing, and distribution made TNCs more widely available to Amateur Radio Operators. "TAPR" might have felt a bit "niche" to many Amateur Radio Operators in the early packet radio era, but if "Good Old MFJ" endorsed packet radio with a product, "there must be something to it".

Unlike others who licensed the TAPR TNC-2 and literally cloned the TNC-2 design, case, front panel, and all, MFJ immediately began manufacturing *their unique version* of the TNC-2 (though it too was electrically a clone of the TNC-2), with less expensive thin, stamped steel enclosure and distinct aluminum faceplate rather than the extruded enclosure that TAPR used. The MFJ-1270 was briefly "co-labeled" as a TNC-2 (I have at least one such unit in my collection of TNCs) in addition to the MFJ numbering system for product names - MFJ-1270. Over the years, many MFJ TNCs have found their way to me, including a new old stock (unused, to date) Vectronics version of the MFJ-1270.

My memory is that the variants of the MJF TNC-2 / MFJ-1270 basic design, including versions with add-on 2400 and 9600 bps modems, versions with HF modems and tuning indicators, etc. easily spanned a decade, perhaps more.

MFJ apparently harbored some affection for the MFJ-1270 as long after discontinuing the MFJ-1270 and variants, as MFJ reused "1270" in a couple of related products. The MFJ-1270X was a licensed version of the Coastal Chipworks TNC-X, and the MFJ-1270PI (which, if memory serves, also a licensed product). Totally out of curiosity, I own one of the latter, and ordered my second, and probably final unit this week.

MFJ also briefly manufactured low powered data radios for 144-148 MHz (MFJ-8621) and 220-225 MHz (though I cannot find an online reference for that product). As these were intended to be simple, dedicated data radios, they were crystal-controlled and at the time they were manufactured, crystals for one's preferred frequencies were easy and inexpensive to obtain.

MFJ always impressed me with their speed of spotting of a potential product niche and rapidly coming out with products to address such niches, at reasonable prices. Some MFJ products seemed rushed and imperfect, though MFJ always seemed responsive in supporting their products with spare parts and repairs. I was also impressed with how granular MFJ's products could be, including small "switch boxes" which you could put between your radio and TNC, to allow easy switching between using your radio's microphone, or the TNC, at the push of a button instead of un-cabling the TNC to hook up a microphone.

I wish K5FLU a happy retirement and kudos to him for deciding to wind down MFJ gracefully. MFJ will be missed in the Amateur Radio market.

Why I'm Not Worried that MFJ Winding Down Presages a Downturn in Amateur Radio

By Steve Stroh N8GNJ

2023 / 2024 seems to be one of those transition years when a lot of change is occurring in Amateur Radio. It really is some of the best of times and worst of times. I've never seen so many small quantity, small company Zero Retries Interesting projects created, and almost none of them are big radios or from big companies.

One of the benefits of writing Zero Retries that I have come to enjoy most these past three years is a sense of optimism about the future of Amateur Radio. It's easier for me… and you as Zero Retries readers, to have that sense of optimism that Amateur Radio *is* active and vital and progressive and future-seeking… *that it has a bright future*. That's because we're collectively aware of *just how much interesting technological innovation is happening* in Amateur Radio. But you and I only know such things because of Zero Retries. If it your primary news sources are / were QST, CQ, or even QRZ or some other "general Amateur Radio news" websites / blogs / newsletters / YouTube channels, etc.

In saying the following, I mean no disrespect to MFJ or its personnel. It was a profitable company for many years that made products that satisfied many needs and many customers in Amateur Radio.

But in many ways, MFJ is company that was designed for the economics of the 20th century rather than the 21st century. It made products that were designed to be sold through retail channels, at a markup, and those products were expected to be sold over the course of years and kept in production and stock - with significant "carrying costs".

What I'm observing from the "Zero Retries Perspective" (ZRP) is a significant shift of Amateur Radio products and projects (especially those that are Zero Retries Interesting) that are created by individuals and small teams. Such products and projects are focused on specialized interest niches, or very small family of products, built in batches for near-immediate sale, and often crowdfunded or bootstrapped by the creator(s). The tools to create new things are *so much better* than in previous eras. For example:

- Easily found open source code and libraries mean a lot less "reinventing the wheel",
- Good, free tools for creating new circuits and printed circuit boards. Then you can order assembled PCBs from China, Inc. at ridiculously low prices and ridiculously fast turnaround.
- Fast processors mean that inefficient, inexpert code can be run at reasonable speeds. It's no longer necessary to code in "efficient" languages such as assembly or C. I'm told that one significant open source software project is largely written in FORTRAN, which you don't hear much about these days. But that software is running on modern PCs, so the "efficiency" of the code is of little concern as long as it works. Even BASIC code can now be reasonably fast, and I'm looking forward to dusting off my PASCAL (limited) experience and try my hand at writing code.
- An example about "easy coding" is a recent experiment I read about. An individual with some software experience wanted to create a project driven by a microcontroller. But they didn't want to *learn* such programming; they just to create a new system (that didn't yet exist). The person used AI tools to create and debug the software, and it worked spectacularly. They were able to make their project a reality, they didn't have to learn microcontroller programming, and the project was relatively easy, fast, and cheap.
- Ability to publicize, conduct widespread testing, and sales using tools like mailing lists and payment processing systems.

A lot of this “grass roots innovation” is, with very broad perspective, simply better recognition of just how much individuals and small groups *can* do - if they’re motivated to *try*.

For MFJ to create the MFJ-1270, it took a team of engineers, manufacturing technicians, a warehouse, retail distributors, and multiple managers. In contrast, the Mobilinkd TNC4 is created, sold, and supported by two people.

Make no mistake, *we’ll all miss MFJ…* but Amateur Radio will be fine.

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John Hays K7VE Transitions to Silent Keyboard

By Steve Stroh N8GNJ

I, and many others, will miss our friend John Hays K7VE and his many unique contributions to Amateur Radio.

John Hays K7VE and I were both part of a group in the Seattle, Washington area that was active in packet radio networking. As that activity faded, the group transitioned to being “mostly social” and until COVID-19, had met for brunch on almost every Saturday morning. There were a number of times that K7VE and I were the only ones to show up (it was a very loose group). Thus K7VE and I were able to exchange many stories, many discussions of Amateur Radio technology, and just enjoyed getting to know each other. We didn’t always agree, but K7VE was never less than gentlemanly in his disagreement. During COVID-19, K7VE retired from his day job, and he and his wife Bev KC7PAA sold their home in the Seattle suburbs and moved to a custom built home in Kingston, Washington across Puget Sound from Seattle. K7VE built a new office / shack / garage, and I was looking forward to visiting him sometime this summer and seeing his new shack.

One of K7VE’s other roles was as Western Washington coordinator for assisting those of us in Western Washington that wanted to use 44Net and 44Net IPv4 addresses. One of K7VE’s contributions was negotiating between ARDC / 44Net for a large block of IPv4 addresses for use in HamWAN.

Yet another significant, but subtle influence of K7VE on Amateur Radio was his role in creating NW Digital Radio and their “founding project”, the UDRX-440 Software Defined Transceiver / Data Radio (PDF). It speaks to K7VE’s humility that he didn’t make a bigger deal that the UDRX-440 was his vision, explained in one of his many presentations at Amateur Radio conferences, that inspired Bryan Hoyer K7UDR and K7VE to found NW Digital Radio.

The UDRX-440 came agonizingly close to becoming a product. I profoundly wish it had, even with many rough edges. It was to be a 25 watt multimode data radio with all the features we wanted - flexible modems, full software control of transmit bandwidth, frequency, power, etc. There were good, valid reasons that it didn't quite make it. The scope of the UDRX-440 informs my vision for what we could do in Amateur Radio to get real Software Defined Transceivers into the hands of Amateur Radio Operators, and we may well have the “pieces in place” in 2024 or 2025 to realize some or most of the UDRX-440’s capabilities.

One of K7VE’s most famous “hacks” was adding the ability to operate D-Star using a Yaesu DR-1X repeater, which Yaesu had built as a dual-mode System Fusion / FM repeater. The DR-1X was introduced and priced as a “loss leader” to encourage clubs to replace older repeaters and promote the growth of Yaesu’s System Fusion. K7VE explained the details in a (now deleted) blog post on the NW Digital Radio website, but archived on Internet Archive - Universal Digital Radio Controller. This same capability (Digital Voice modes) is now possible with adding a Multimode Digital Voice Modem (MMDVM) to an FM repeater. But, at the time, K7VE’s method was an elegant hack that even had Yaesu (at least a few personnel) chuckling, if a bit grimly.

K7VE was an early and enthusiastic advocate of ARDC after it transitioned to its current form as a charitable foundation and began awarding grants. Before being hired as staff as ARDC’s Outreach Manager, K7VE was an active and enthusiastic supporter of ARDC’s grant making work in chairing ARDC’s first Grants Advisory Committee. K7VE played a critical part in getting ARDC’s grant making up and running, which is told well in ARDC’s remembrance of K7VE - Remembering John Hays K7VE SK.

Beyond his large family, I think K7VE’s involvement in ARDC will be one of his largest legacies given all the change and improvement in Amateur Radio that is resulting from ARDC’s grants that support Amateur Radio activities.

K7VE was also passionate about D-Star and promoting D-Star as a “made for Amateur Radio” system. A remembrance from Jonathan Naylor K4GLX (next story) explains this facet of John’s contributions well.

As for me… I miss my smart, kind friend.

Live life, folks - time is passing fast for us.

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John Hays K7VE SK

By Jonathan Naylor G4KLX

My friend John Hays K7VE died unexpectedly on April 16th. The Facebook algorithms didn't see fit to show me this information and I had to be told days later by Jim KI6ZUM. Instead FB insisted on feeding me pages that I don't follow, rather than stuff that matters to me. Anyway I digress.

I knew John pretty well. He had been an early supporter of my software, and my first dealing with him were in Autumn 2009 only a few months after the release of my first D-Star and FM repeater software, and before it was in widespread use. Many of our emails were about the poor performance of the then popular GMSK modems and what we could do about them, as well as more software related items.

Once I had released the ircDDB Gateway in Autumn 2010 he moved his repeater, then based on an Icom repeater stack, over to use it rather than Icom's G2 software. The next few years would see many more emails being exchanged as I enhanced my software and he suggested changes, reported bugs, etc. John came up with the idea for StarNet which is still included with the ircDDB Gateway.

I first physically met John in 2014 as I was to attend Hamvention as a guest of NWDR, which was John and Bryan Hoyer at the time. We manned a booth at the old Hara arena, and despite being used to Ham Radio in Friedrichshafen, nothing could prepare me for the onslaught of Hamvention. I had a great time, and by the time that Sunday rolled around, I was burned out! Too much of a good thing I suppose.

John backed off a bit with my software with the release of the MMDVM. He wasn't happy with me supporting purely commercial protocols like DMR. It was indeed ironic that I got my first DMR radio at that very Hamvention from Jerry Wanger of CSI, and I also crossed swords with the DMR-MARC guys, which strongly encouraged me to go down the route that would become the MMDVM a little while later.

Since then I would see John at various shows, and then after Covid when things had more or less returned to normal, I saw him at Ham Radio in 2022, and 2023 manning the ARDC stand. I also saw him at Pacificon in October 2023 which would turn out to be the last time I saw him. We would sit and have long conversations about development work and potential projects. I was very much looking forward to seeing him at Hamvention in a few weeks.

Rest in peace John, it was an honour to be your friend.

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ZR > BEACON

By Steve Stroh N8GNJ

Short mentions of Zero Retries Interesting items.

M17 Project Seeking Funding Sources to Continue Development

Wojciech Kaczmarski SP5WWP on LinkedIn:

> I'm looking for funding sources for the M17 Project.
>
> Our current tasks include hardware proliferation (Remote Radio Unit, Module17/Micro17 and OpenHT being excellent examples). As the Project relies largely on volunteer work, I don't believe it's viable for granting (it's close to impossible to plan ahead, regardless of the time frame, as volunteer work is largely unpredictable, unreliable and chaotic).
>
> Prototyping generates the largest expenses at the moment. We will soon run out of funds and will no longer be able to sustain development.
>
> I'd love to keep working on our cutting edge open-source amateur radio hardware designs for profit. An alternative solution would be to start working as an external contractor or having ability to invoice the funder for the work done. The whole team is just 2 developers (hardware+firmware).
>
> I look forward to your thoughts on this.

I had worried about this possibility. SP5WWP was keeping up a frantic pace on multiple projects. The Remote Radio Unit alone was a daunting project, but its potential is hugely promising. I hope he will be able to complete at least one “ready to go to manufacturing” prototype so a commercial sponsor would have all the material needed to make it available as a product.

LinkedIn seems to be SP5WWP’s primary posting / contact system:

https://www.linkedin.com/in/wkaczmarski/

D-STAR InfoCon is back at Dayton Hamvention for 2024

> D-STAR InfoCon is back at Dayton Hamvention for 2024 providing an introduction to D-STAR for new users and more advanced topics for more experienced D-STAR users. The class will be held at the Drury Inn Ballroom at 6616 Miller Lane in the heart of hotel row in Dayton. The 3-hour class will be held on Friday, May 17th beginning at 8:00am local time. This year’s topics will include getting on-the-air with D-STAR, how to connect around the world, programming for all models of D-STAR radios, using DR Mode, easy updating your radio memories and using hotspots and other D-STAR devices.

Mentioned in honor of Silent Keyboard John Hays K7VE, who was a fan of D-Star.

ELEKITSORPARTS - New digiPi HAT

Image courtesy of ELEKITSORPARTS

This is the new digiPi HAT for ham radio digi modes from a raspberry Pi. The board is designed to be topped on a Raspberry Pi 4 or 5, on which you could work ham radio digital modes remotely. The new digiPi HAT is compatible with KM6LYW's digiPi image. With KM6LYW's image, you could work digi modes from a tablet or a smart phone through an internet browser. If you don't use the KM6LYW's image, you could still use the new digiPi HAT on a regular [Raspberry Pi OS] or Debian OS by installing the softwares like WSJT-X or DIRE WOLF, which enable you to work FT8/FT4 or APRS on your Pi SBC. In this case, the TFT LCD will not work, unless you could write your own C++ or Python code to make it display somethings, callsign, the decoded info from DIRE WOLF or WSJT-X.

Our new digiPi HAT integrates a TFT LCD, two buttons, an on-board temperature sensor(LM75A), an ambient light sensor(BH1750), three 2.54 pin-headers for connecting it to a bme680 environmental sensor, an external GPS module or some other sensors with I2C interface. These sensors could be used for experimental purpose, that says, with these sensors, you are able to make more funs on APRS by sending beacon packets containing the info measured by the installed sensors or a positional info from a GPS. We also preserve a PCB footprint for lora modules. You could install a SX1278, SX1276 or a LLCC68 lora module on your own. With a lora module, you could receive some lora packets and have it sent again by APRS, but you need C++ or Python skills to do this. YOU DON'T HAVE TO BUY A BME680 and A GPS MODULE if you just use the digiPi HAT for the normal ham radio digi modes operation.

This is a perfect illustration of the new, more granular ecosystem of "micro manufacturers" for Zero Retries Interesting devices. The DigiPi Project was started solely as instructions for Do It Yourself hardware, with good software. Now DigiPi is blossoming into several different options for a really polished experience.

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Join the *Fun* on Amateur Radio

If you're not yet licensed as an Amateur Radio Operator, and would like to join the fun by *literally having a license to experiment with radio technology*, check out
Join the Fun on Amateur Radio for some pointers.

Zero Retries Frequently Asked Questions (FAQs) — In development 2023-02.

Closing the Channel

In its mission to highlight technological innovation in Amateur Radio, promote Amateur Radio to techies as a literal license to experiment with radio technology, and make Amateur Radio more relevant to society in the 2020s and beyond, Zero Retries is published via email and web, and is available to everyone at no cost. Zero Retries is proud *not to participate* in the Amateur Radio Publishing Industrial Complex, which hides Amateur Radio content behind paywalls.

My ongoing ***Thanks*** to:

- Tina Stroh KD7WSF for, well, *everything!*
- ***Founding Members*** **who generously support Zero Retries financially:**
  Founding Member 0000 - Steven Davidson K3FZT
  Founding Member 0001 - Prefers to Remain Anonymous 01

  Founding Member 0002 - Chris Osburn KD7DVD
  Founding Member 0003 - Don Rotolo N2IRZ
  Founding Member 0004 - William Arcand W1WRA
  Founding Member 0005 - Ben Kuhn KU0HN

Founding Member 0006 - Todd Willey KQ4FID
Founding Member 0007 - Merik Karman VK2MKZ
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Founding Member 0009 - Prefers to Remain Anonymous 19

- Numerous Annual and Monthly subscribers who also generously support Zero Retries financially!

Want to Support Zero Retries?

- The *most* effective way to support Zero Retries is to simply mention Zero Retries to your co-conspirators that are also interested in knowing more about technological innovation that is occurring in Amateur Radio and encourage them to become a fellow subscriber.
- One particularly effective method of promoting Zero Retries is to add a mention of Zero Retries to your QRZ page (or other web presence) and include a link:

  https://www.zeroretries.org

- If you'd like to financially support Zero Retries, becoming a paid subscriber is *greatly* appreciated and helps offset expenses incurred in publishing Zero Retries. Paid subscriptions for Zero Retries are *entirely optional*, as explained in this special issue of ZR:
  Zero Retries Administrivia - Activating Payment Options.

These blogs and newsletters regularly feature Zero Retries Interesting content:

- Dan Romanchik KB6NU mentions "Zero Retries Interesting" topics so regularly on his blog (that I otherwise wouldn't know about) that I've bestowed on him the honorific of Pseudostaffer.
- Jeff Davis KE9V also mentions "Zero Retries Interesting" topics so regularly on his blog (that I otherwise wouldn't know about) that I've bestowed on him the honorific of Pseudostaffer.
- Amateur Radio Weekly by Cale Mooth K4HCK is a weekly anthology of links to interesting Amateur Radio stories.
- Experimental Radio News by Bennet Z. Kobb AK4AV discusses (in detail) Experimental (Part 5) licenses issued by the US FCC. It's a *must-read-now* for me!
- RTL-SDR Blog - *Excellent* coverage of Software Defined Radio units.
- TAPR Packet Status Register has been published continuously since 1982.
- Other Substack Amateur Radio newsletters recommended by Zero Retries.

These YouTube channels regularly feature Zero Retries Interesting content:

- HB9BLA Wireless by Andreas Spiess HB9BLA
- KM6LYW Radio by Craig Lamparter KM6LYW (home of the DigiPi project)
- Modern Ham by Billy Penley KN4MKB
- Tech Minds by Matthew Miller M0DQW

Zero Retries is currently using the Substack email publishing platform to publish Zero Retries. It's particularly suitable for small newsletters as you can get started for no cost.

If you're reading this issue on the web and you'd like to see Zero Retries in your email Inbox every Friday afternoon, just click below to join ***~~1500+~~ 1600+*** other subscribers:

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Social Media:

Zero Retries (N8GNJ) is on Mastodon — n8gnj@mastodon.radio — just click:

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More bits from Steve Stroh N8GNJ:

- SuperPacket blog — *Discussing new generations of Amateur Radio Data Communications — beyond Packet Radio (a precursor to Zero Retries)*
- N8GNJ blog — *Amateur Radio Station N8GNJ and the mad science experiments at N8GNJ Labs — Bellingham, Washington, USA*

Thanks for reading!
Steve Stroh N8GNJ / WRPS598 (He / Him / His)
These bits were handcrafted (by a mere human, not an Artificial Intelligence bot) in beautiful Bellingham (The City of Subdued Excitement), Washington, USA, and linked to the Internet via **Starlink *Satellite* Internet Access**.

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Quite possibly, there are actually hundreds, not just dozens of "microcompanies" manufacturing Zero Retries Interesting products. We'll only know when a comprehensive directory is created.